

UC Irvine Environmental Health & Safety

SECTION:	TITLE: Scaffolding Safety Program	
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1. Program Description

The purpose of this program is to specify work procedures and training for the safety of UC Irvine employees erecting, setting up, and working on scaffolds at heights greater than six (6) feet. This would include, but is not limited to, work on portable or rolling scaffolds, wooden or metal scaffolds, suspended scaffolds, or ladder jack scaffolds.

This program further ensures a safe workplace based on the following written procedures for scaffold work. These procedures shall be reviewed and updated as needed to comply with revised Cal/OSHA regulations, new best practices in scaffolding, and as work practices demand.

2. Scope

This program applies to all University employees that perform any duties on scaffolding of various types greater than six feet above grade. Employees using scaffold devices shall be trained and use safe work practices.

3. Definitions

Competent Person - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Fixed Ladder: A ladder, including an individual rung ladder, which is permanently attached to a structure, building, or equipment.

Guardrail: A barrier with a top rail 42 inches high and a mid rail erected to prevent personnel from falling from working levels more than 30 inches above the floor, ground, or other working areas of a building.

Qualified person - One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Scaffold: Any temporary elevated or suspended platform, and its supporting structures, used for supporting employees or materials or both.

Toe Board: A low protective barrier that prevents material and equipment from falling to lower levels and which protects personnel from falling.

Tie-Off: A procedure of connecting directly or indirectly to an anchorage.

Unprotected Sides and Edges: Any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail.

4. Responsibilities

Employees who work on scaffolds shall be knowledgeable of the following:

- The nature of any electrical hazards, fall hazards, and falling object hazards in the work area;

- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used;
- The proper use of the scaffold, and the proper handling of materials on the scaffold; and
- The maximum intended load and the load carrying capacities of the scaffolds.

Competent and Qualified Persons

The following tasks shall only be done by the persons deemed competent or qualified to perform them:

Competent Person:

- Shall not intermix scaffold components manufactured by different manufacturers unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components manufactured by different manufacturers will not be modified in order to intermix them unless the competent person determines the resulting scaffold is structurally sound;
- Shall evaluate direct connections before a suspension scaffold is used. The competent person shall confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed;
- Shall inspect suspension scaffold ropes prior to each work shift and after every occurrence that could affect a rope's integrity. Ropes shall be replaced if any of the conditions outlined in [Title 8, CCR §1658](#) exist; and
- Shall supervise and direct any operation involving scaffolds that will be erected, moved, dismantled, or altered.

Qualified Person:

- Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design.
- Swaged attachments or spliced eyes on wire suspension ropes of suspension scaffolds shall not be used unless they are made by the wire rope manufacturer or a qualified person.
- Each employee who performs work while on a scaffold shall be trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.

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- Shall develop and implement scaffold safety policy and revise as necessary;
- Shall ensure that University policies are enforced and safe work practices are used;
- Shall ensure appropriate training is provided for scaffold users upon request by departments and training records are maintained; and
- Shall provide technical support to departments and employees when questions or concerns arise with regards to scaffold safety.

5. Program Components

- A. Capacity - Taking into account Cal/OSHA rules and the engineering/manufacturing requirements of scaffolds used on campus, the following rules shall apply.
- Each scaffold and scaffold component used shall support, without failure, its own weight and at least four (4) times the maximum intended load applied or transmitted to it.
 - When using non-adjustable suspension scaffolds, each suspension rope, including connecting hardware, shall support, without failure, at least six (6) times the maximum intended load applied or transmitted to that rope.
- B. The following safety rules apply for scaffold platform construction:
- Each scaffold plank shall be installed so that the space between adjacent planks and the space between the platform and uprights is no more than one inch wide.
 - Except for outrigger scaffolds (3 inches) and plastering and lathing operations (18 inches), the front edge of all platforms shall not be more than 14 inches from the face of the work, unless there is a guardrail or personal fall arrest system in place that meets regulations.

The following additional construction and safety information shall be included depending on the type of scaffold being erected.

C. Supported Scaffolds

- Supported scaffolds with a height to base width ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means.
- Supported scaffold poles, legs, posts, frames, and uprights shall always bear on base plates and mud sills or other adequate firm foundations.

D. Suspension Scaffolds

- Before a scaffold is used, the competent person shall evaluate all direct connections. The competent person will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads that will be imposed.
- When winding drum hoists are used on a suspension scaffold, they shall never contain less than four wraps of the suspension rope at the lowest point of scaffold travel.

Gaining Access to Scaffolds

Accessing the working platform is critical to the safety of employees. This section outlines the mechanical requirements for gaining access to scaffold platforms such as:

1. Ladders,
 2. Ramps and walkways,
 3. stair rails, and
 4. Direct access from another scaffold.
- Portable, hook-on, and attachable ladders shall be positioned so as not to tip the scaffold.

- All stair rail systems and handrails shall be surfaced to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothes.

Safe means of access shall be provided for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. A competent person shall determine whether it is feasible or would pose a greater hazard to provide, and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level and are not more than 22 inches apart vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand hold and foot space.

Cross-braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

Fall Protection Plan

Fall protection planning is critical to the safety and well being of University employees. The fall protection plan follows the Cal/OSHA requirements that are different depending on the type of scaffold that is being used.

Fall protection shall be provided for any employee on a scaffold more than 10 feet above a lower level. Each employee shall be protected on self-contained, frame structure supported and adjustable scaffolds by a guardrail system. The guardrail system:

- Shall have a minimum 200-pound toprail capacity.
- Shall be installed before being released for use by employees.

Falling Object Protection

All employees shall wear hardhats when working on, assembling, or dismantling scaffolds. This is the primary protection from falling objects. Additionally, the following actions shall be taken:

- Install all guardrail systems with openings small enough to prevent passage of potential falling objects; and
- Prevent tools, materials, or equipment that inadvertently fall from scaffolds from striking employees by barricading the area below the scaffold.

Using Scaffolds

Site preparation, scaffold erection, fall protection, and gaining access to the working platform are only some of the requirements for scaffold work. While this all takes concentration and safe work practices, the most dangerous time can be when employees are concentrating on their work and not particularly aware of the hazards of working from scaffolds. It is critical that employees who use

scaffolds be trained, among other things, in the recognition of the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The competent person shall inspect all scaffolds and scaffold components for visible defects before each work shift, and after any occurrence that could affect a scaffold's structural integrity. However, in addition to that, all users of scaffolds at UC Irvine shall know and understand the following safety rules:

- Scaffolds and scaffold components shall never be loaded in excess of their maximum intended loads or rated capacities.
- Debris shall not be allowed to accumulate on platforms.

Specific Procedures

In addition to the general procedures in this written safety plan, there are procedures that apply to specific types of scaffolds. The safety rules for these specific types of scaffolds are found in Title 8 California Code of Regulations, Construction Safety Orders - Article 22, Sections 1640 - 1655.

Prohibited Practices

The following practices are not allowed on any University projects:

- Scaffold components manufactured by different manufacturers shall never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.
- Unstable objects shall never be used to support scaffolds or platform units. Footings must be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
- Cross braces shall never be used as a means of access.
- The use of shore or lean-to scaffolds is prohibited.

6. Reporting requirements

Constant awareness of and respect for scaffolding equipment, elevated work areas and compliance with all applicable UC Irvine safety rules is mandatory.

Supervisors shall issue warnings and implement disciplinary actions up to and including termination for failure to follow the guidelines of this program.

Employees shall report any safety concerns to their supervisor or EH&S.

7. Training Requirements and Competency Assessment

EH&S shall coordinate the training program for the Campus which shall include classroom instruction and operational training on specific scaffold operations performed on campus.

A. Employees Who Use Scaffolds:

Employees who perform work on scaffolds shall be trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following areas as applicable:

- The nature of and the correct procedures for dealing with electrical hazards.
 - The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object protection systems used.
 - The proper use of the scaffold, and the proper handling of materials on the scaffold.
 - The maximum intended load and the load-carrying capacities of the scaffolds used.
 - Any other pertinent requirements of the Cal/OSHA rules.
- B. Employees Who Erect, Disassemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds:
 Employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds shall be trained by a competent person to recognize the hazards associated with the work being done. The training shall include the following topics as applicable:
- The nature of scaffold hazards.
 - The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.
 - The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
 - Any other pertinent requirements of this subpart.
- C. Retraining Requirements:
 Retraining shall be done in at least the following situations:
- Where changes at the worksite present a hazard about which the employee has not been previously trained.
 - Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
 - Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

8. Information and External References

Title 8 California Code of Regulations, General Industry Safety Orders - §3275, §3285

Title 8 California Code of Regulations, Construction Safety Orders - Article 2